

## **REMARKS**

Presently, claims 1-11, 17-24 and 46-49 and 51-52 are pending and under rejection. Claims 12-16, 25-26, 34 and 36-40 have previously been cancelled, claims 27-33, 35, 41-43 and 50 have previously been withdrawn and claim 9 is cancelled herein.

### **Rejections Under 35 U.S.C. §112, First Paragraph – Written Description**

The Examiner has rejected claims 1-11, 17-24 and 46-49 and 51-52 under 35 U.S.C. §112, first paragraph, “as failing to comply with the written description requirement.” The Examiner states that “the claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.” The Examiner states that the claims are “broadly drawn to any *B. oleracea* plant resistant to clubroot disease, wherein the resistance to clubroot is monogenic and dominant.” It is the Examiner's position that the specification only adequately describes plants of line CFL667, and does not adequately describe each and every *B. oleracea* plant resistant to clubroot disease. For support the Examiner cites the MPEP and *Vas-Cath Inc. v. Mahurkar*, 19 USPQ2d 1111 (Fed. Cir. 1991).

Applicants respectfully disagree with the Examiner and traverse the rejection. Nevertheless, in order to expedite prosecution of the application, Applicants have amended claim 1 to include the limitations of claim 9, that is, that the monogenic, dominant resistance is obtained from *B. rapa*.

Applicants agree with the Examiner regarding the standard for satisfying the written description requirement, namely that a “patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor has possession of the claimed invention.” However, the standard set forth in *Vas-Cath, Inc.* and subsequently the MPEP, is further illuminated by more recent decisions of the CAFC. For example, in *New Railroad Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 63 USPQ2d 1843 (Fed. Cir. 2002), the court stated that the written description requirement requires “That the disclosure must show he had invented each feature that is included as a claim limitation.” In *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 41 USPQ2d 1961 (Fed. Cir. 1997), the court cited *Vas-Cath Inc.* as setting forth the appropriate standard, and then stated “One shows that one is ‘in possession’ of the invention by describing the invention, with all its claimed limitations.”

For the reasons set forth immediately below, Applicants respectfully submit that the subject specification adequately describes the claimed invention as required under the current patent law.

Generally, the question here is whether the Applicants invented a *B. oleracea* plant with the characteristics (limitations) presented in the claims, and whether those claim limitations are disclosed in the specification. Claim 1 recites a *B. oleracea* plant that is:

- (1) resistant to clubroot disease,
- (2) wherein said resistance is obtained from clubroot resistant *B. rapa* plant, and
- (3) wherein said resistance is monogenic and dominant

Thus, under the above-cited standards, to be adequately described, these three limitations must be described in the specification. First, pending claim 1 (which, as currently amended is equivalent to original claim 9), and thus dependent claims 2-8, 10 and 17-24 of the application recite a *B. oleracea* plant comprising the subject limitations. There is a strong presumption that an adequate written description of the claimed invention is present when the claims were presented in the original application as filed (In re Wertheim, 541, F.2d 257, 263 (C.C.P.A. 1976).

In addition, the claimed limitations are described very early in the specification, for example, on page 2, the 2<sup>nd</sup> full paragraph states:

Accordingly, the present invention addresses the problem of unsatisfactory resistance to the disease clubroot in *B. oleracea*. To achieve improved resistance to the disease in *B. oleracea*, the present invention discloses the transfer of a monogenic dominant resistance to clubroot from chinese cabbage (*B. rapa*) to the *B. oleracea* broccoli, and then further to other *B. oleraceas*, such as white cabbage, cauliflower and Brussels sprouts.

On page 3 of the specification, lines 24-25, it is stated that "In another preferred embodiment, the resistance is obtainable from a clubroot resistant *B. rapa* plant, preferably from Chinese cabbage F1 hybrid Parkin." Parkin is a publicly available line sold by Takii.

As shown above, the instant specification describes the limitations found in claim 1. Despite the Applicants describing these claim limitations in the specification, the Examiner asserts that the specification does not show that Applicants were in possession of the claimed subject matter at the time of filing, namely a *B. oleracea* plant with monogenic and dominant resistance to clubroot, but were instead only in possession of line CFL667. As claim 1 is now currently amended to include the limitation "wherein the resistance is obtained from a clubroot resistant *B. rapa* plant", it is increasingly clear that the specification adequately describes the limitations found in claim 1. Contrary to the Examiner's position, the written description is not limited to line CFL667. Line CFL667 is provided only as a representative **example**, and as cited above, the specification discloses a *B. oleracea* plant wherein the resistance is obtainable from a clubroot resistant *B. rapa* plant, preferably from Chinese cabbage F1 hybrid Parkin. By choosing the word "preferably", the Applicants have disclosed what they believe to be the best source for *B. rapa* clubroot resistance, however, this is not the only source. Any breeder of ordinary skill in the art familiar with the *Brassica*

genus would understand from this statement that the crucial aspect is that a *B. rapa* plant resistant to clubroot be used as a source. One skilled in the art, based on the written description and using common knowledge in the art, could identify and select from available *B. rapa* plants resistant to clubroot, and, through the breeding techniques disclosed in the written description, breed a *B. oleracea* plant comprising the limitations claimed in the instant application.

It is important to note that the claimed limitations are identical from plant to plant. Applicants respectfully submit that one skilled in the art would reasonably understand that that the inventor possessed the breadth of the claimed invention. Based on the foregoing, Applicants assert that the specification provides adequate written description for the claimed subject matter and request reconsideration of the rejection.

#### **Rejections Under 35 U.S.C. §112, First Paragraph – Enablement**

The Examiner has rejected claims 1-11, 17-24 and 46-49 and 51-52 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The Examiner's grounds for this rejection are that the claims contain "subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention." The Examiner goes on to state that the "specification does not disclose a repeatable process to obtain the plant and it is not apparent if the plant is readily available to the public." The Examiner notes that enablement can be satisfied by a deposit of seed.

Applicants note that they disagree with the Examiner regarding the lack of a repeatable process being disclosed in the specification. It is, for example, set forth in the last paragraph on page 1 of the specification that monogenic dominant resistances have been described in *Brassica rapa* such as, for example, a monogenic dominant resistance *B. rapa* Chinese cabbage. The application gives a person of ordinary skill in the art clear guidance how he can manage to introgress the resistance trait from the *rapa* genetic background into the *Brassica oleracea* background. Both of these parameters, clubroot resistance and its monogenic dominant character, can be easily tested by the methods disclosed in the present application. Reference is made in this respect to Example 2 on page 20 of the application where a disease test is described in detail. It is further described how the monogenic and dominant character of the trait can be determined by using tester plants. This is detailed in the specification by the paragraph bridging pages 14 and 15 as well as the remainder of page 15. This section describes how the tester plant can be used in order to determine the monogenic and dominant character of the trait. Thus, Applicants respectfully submit that this rejection is improper and should be withdrawn.

However, as the Examiner has stated that a deposit of seed would suffice for enablement purposes, Applicants here note that a deposit of seed was made on June 28, 2002. Applicants have enclosed herewith a copy of the deposit receipt for the *Brassica oleracea* line CFL667, which was deposited at NCIMB with accession number 44134 on June 28, 2002.

#### **Rejections Under 35 U.S.C. §102(b)**

Claims 1-4, 11, 17, 19, 21-24, 46 and 47 stand rejected under 35 U.S.C. §102(b) as being anticipated by Chiang et al (HortScience 20(3): 457-458, 1985). As independent claims 1 and 11 have been amended to include the limitations of claim 9, namely that the resistance is obtained from a *B. rapa* plant, and given that the Examiner did not reject claim 9, Applicants submit that this rejection is rendered moot by the claim amendments and request that it be withdrawn.

Claims 1-4, 11, 17, 19, 21-24, 46 and 47 stand rejected under 35 U.S.C. §102(b) as being anticipated by Baggett et al (HortScience 20(4): 784-785, 1985). As independent claims 1 and 11 have been amended to include the limitations of claim 9, namely that the resistance is obtained from a *B. rapa* plant, and given that the Examiner did not reject claim 9, Applicants submit that this rejection is rendered moot by the claim amendments and request that it be withdrawn.

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#### **Rejections Under 35 U.S.C. §102/103**

Claims 1-11, 17-24, 46-49 and 51-52 stand rejected under 35 U.S.C. 102(b) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Landry et al (Genome 35(3): 409-420, 1992).

The Examiner has provided separate reasons of rejection for varying groups of claims from the list of rejected claims above. However, as the newly amended independent claims 1 and 11 now contain the limitations of claim 9, only the statements regarding claim 9 are relevant, as each of the remaining claims are dependent and would contain this limitation.

With regards to claims 9 and 10, the Examiner states that Landry et al do not teach resistance obtainable from a clubroot resistant *B. rapa* plant nor the Chinese cabbage hybrid 'Parkin'. The Examiner goes on to state that it would have been obvious to one of ordinary skill in

the art “that clubroot resistance would come from other different sources of *Brassica* spp and that the choice of any particular *Brassica* spp depends on the breeder’s goals.”

Applicants respectfully traverse this rejection. As the Examiner has acknowledged that Landry does not disclose resistance obtainable from a clubroot resistant *B. rapa* plant, nor the Chinese cabbage hybrid ‘Parkin’, the 102(b) aspect of this rejection is moot.

As to the 103(a) rejection, Applicants submit that the Examiner has not made a *prima facie* case of obviousness. The Examiner has stated that it would be obvious to modify teachings of Landry to use a *B. rapa* plant because it would be obvious to one of ordinary skill that the clubroot resistance could come from other *Brassica* sources. However, the Examiner provides no support for this statement. There is no teaching or suggestion within the lone reference cited that would lead a person of ordinary skill in the art to use a *B. rapa* plant as a source of clubroot resistance. It cannot be obvious to add a characteristic to a reference that is not even discussed in the reference.

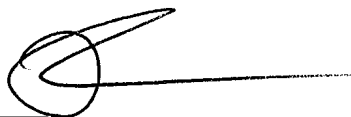
Moreover, there would not be a likelihood of success as *B. rapa* and *B. oleracea* cannot be crossed as simply as *B. oleracea* and *B. napus*, the source of the resistance in the Landry reference. As discussed in the specification in Example 1, embryo-rescue techniques were employed several times to obtain plants from the cross between *B. rapa* and *B. oleracea*. There was no guarantee that such a cross would even succeed in producing a viable plant, let alone succeed in transferring the resistance from a *B. rapa* plant having 10 chromosomes to a *B. oleracea* plant having 9 chromosomes. That such a cross was ultimately successful in creating viable plants, and that of said plants, some were found to have incorporated the clubroot resistance gene was unlikely and rises to the level of unexpected results.

Thus, Applicants submit that the amended claims are not obvious over Landry and request that this rejection be withdrawn.

## **CONCLUSION**

Applicants respectfully submit that all outstanding issues in the present case have been addressed in this paper. Applicants request continued prosecution on the merits and allowance of the claims as presented herein. In the event issues remain that could be dealt with on the telephone, the Examiner is encouraged to call the undersigned attorney for Applicants at 919-765-5117.

Respectfully submitted,

A handwritten signature in black ink, consisting of a stylized 'S' followed by a horizontal line.

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